PATENT

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## In the United States Patent and Trademark Office

Applicant(s): David L. Detlefs et al.

Title: LOCK FREE REFERENCE COUNTING

Application No.: 09/837,671        Filed:        April 18, 200**RECEIVED**

Examiner: Alvin E. Oberley        Group Art Unit: 2151        APR 2 2 2002

Atty. Docket No.: 004-5723        Technology Center 2100

April 10, 2002

COMMISSIONER FOR PATENTS
Washington, DC 20231

## PRELIMINARY AMENDMENT

Prior to the first action on the merits, please amend the above-identified application as follows:

### *In the Specification*

Please replace paragraph 1002 on page 1 with the following:

A1

[1002] In addition, this application is related to U.S. Patent Application Publication No. US 2001/0056420 A1 and U.S. Patent Application Publication No. US 2001/0047361 A1.

, U.S. PATENT 6,826,757, , NOW ALLOWED.

Please replace paragraph 1042 beginning on page 18 with the following:

A2

[1042] In this section, we show how to use our methodology to construct a GC-independent implementation of a concurrent double-ended queue (deque) object, based on a GC-dependent implementation presented in greater detail in U.S. Patent Application Publication No. US 2001/0056420 A1, entitled "LOCK-FREE IMPLEMENTATION OF CONCURRENT SHARED OBJECT WITH DYNAMIC NODE ALLOCATION AND DISTINGUISHING POINTER VALUE," naming Guy L. Steele Jr., Alexander T. Garthwaite, Paul A. Martin, Nir N. Shavit, Mark S. Moir and David L. Detlefs as inventors, and filed on even date herewith. The description, in the above-identified U.S. Patent Application Publication, of a deque object implementation (including supporting data structure representations and access operations)

^ U.S. PATENT 6,826,757,

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suitable for use in a garbage-collected storage environment is incorporated herein by reference in its entirety. Hereafter, a class of implementations patterned on such techniques is referred to variously as the "Snark" algorithm, data structure, access operations, implementation, etc.
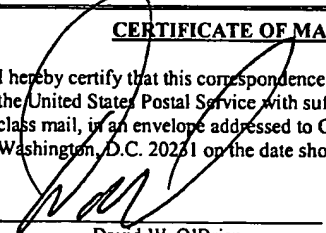
Please replace paragraph 1044 beginning on page 19 with the following:

[1044] Transformation of the pushRight access operation is illustrated in significant detail herein. Accordingly, based on the description herein, corresponding transformations of other Snark access operations, e.g., pushLeft, popRight and popLeft will be appreciated by persons of ordinary skill in the art. Indeed, a resultant set of access operations is described in the above-incorporated U.S. Patent Application Publication. Furthermore, U.S. Patent Application Publication No. US 2001/0047361 A1, entitled "CONCURRENT SHARED OBJECT IMPLEMENTED USING A LINKED-LIST WITH AMORTIZED NODE ALLOCATION," naming Paul A. Martin, David L. Detlefs, Alexander T. Garthwaite, Guy L. Steele Jr. and Mark S. Moir as inventors, and filed on even date herewith, which is incorporated herein by reference, describes an explicit reclamation embodiment of another concurrent shared object implementation that was achieved by applying the methodology described herein.
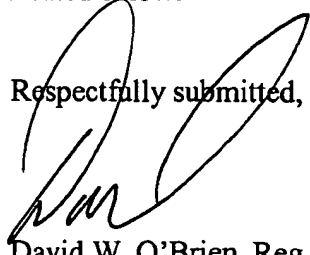
## REMARKS

No new matter has been added. Examination on the merits is respectfully requested.

If the Examiner has any questions, Applicants respectfully request that the Examiner contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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